CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
DEPARTMENT OF PESTICIDE REGULATION
MEDICAL TOXICOLOGY BRANCH

SUMMARY OF TOXICOLOGY DATA
BETA-BROMO-BETA-NITROSTYRENE

Chemical Code # 001892, Tolerance # 50283
SB 950 # 541
August 23, 2002

I. DATA GAP STATUS

Chronic toxicity, rat:	Data gap, no study on file
Subchronic, rat, dermal:	No data gap, no adverse effect (other than dermal irritation)
Chronic toxicity, dog:	Data gap, no study on file
Oncogenicity, rat:	Data gap, no study on file
Oncogenicity, mouse:	Data gap, no study on file
Reproduction, rat:	Data gap, no study on file
Teratology, rat:	No data gap, possible adverse effect
Teratology, rabbit:	Data gap, no study on file
Gene mutation:	Data gap, inadequate study, possible adverse effect
Chromosome effects:	No data gap, possible adverse effect
DNA damage:	Data gap, inadequate study, no adverse effect indicated
Neurotoxicity:	Not required at this time

Toxicology one-liners are attached.

All record numbers through 11410 in 50283 - 010 were examined.

** indicates an acceptable study.

Bold face indicates a possible adverse effect.

File name: T020823
Prepared by J. Kishiyama and Gee, August 23, 2002

II. TOXICOLOGY ONE-LINERS AND CONCLUSIONS

These pages contain summaries only. Individual worksheets may contain additional effects.

COMBINED, RAT

No study on file.

CHRONIC TOXICITY, RAT

No study on file.

CHRONIC TOXICITY, DOG

No study on file.

ONCOGENICITY, RAT

No study on file.

ONCOGENICITY, MOUSE

No study on file.

REPRODUCTION, RAT

No study on file.

TERATOLOGY, RAT

** 016 114108 Schroeder, R. "A Teratogenicity Study in Rats with Giv 2-0820." (Bio/dynamics, Inc., Project No. 87-3163, 7/6/88). Giv 2-0820, purity 99.1%, was administered by gastric intubation at doses of 0 (corn oil), 30, 75 and 150 mg/kg/day to 24-25 Sprague-Dawley CD® mated female rats/group on Days 6 through 15 of gestation. Body weight gain (corrected) was reported 25.7% lower and treatment-related for the high dose group during Days gestation 6-20. Total body weights, however, were similar. Mortality was 2/25 and considered treatment- related for the high dose group. The incidences of excessive salivation, moist rales and staining of the skin/fur in the ano-genital area were increased for the high dose group. Maternal NOEL = 75 mg/kg/day (body weight, clinical signs). Fetal weight in the high dose group was 8.7% lower relative to the control. Incomplete ossification of the cranial bones and unossified 6th sternebra (high dose group). Developmental NOEL = 75 mg/kg/day (fetal weight). No significant evidence of treatment-related teratogenicity. ACCEPTABLE. (Kishiyama and Gee, 8/19/02).

018 114110 Schroeder, R. E. " Range-finding Study to Evaluate the Toxicity of GIV 2-0820 in the pregnant rat." (Bio/dynamics Inc., B/D Project #87-3162, 12/11/87.) GIV 2-0820 (lot 8454-69, 99.1%) was administered via gastric intubation at doses of 0 (Mazola oil), 30, 75, 150, 300, or 600 mg/kg/day to 5 mated female CD rats/group on gestation days 6-15. Mortality was 20%, 40%, and 100% for the 150, 300 and 600 mg/kg/day groups, respectively. Reduced body weight gain and food consumption, increased incidence of A-G stains and salivation and no evidence of fetotoxicity were reported for the 150 and 300 mg/kg/day groups. Supplemental study. (Kishiyama and Gee, 8/16/02).

TERATOLOGY, RABBIT

No study on file.

GENE MUTATION

50283 - 015 114105 "Salmonella/Mammalian Microsome Mutagenicity Test with $-Bromo-$-Nitrostyrol." (A. Timm, CCR, Cytotest Cell Research GmbH & Co., Germany, CCR Project #102205, 7/8/87). $-Bromo-$-Nitrostyrol (batch no.: 3100), purity 92%, was tested in two experiments at concentrations of 0 (DMF), 0.01, 0.10, 0.33, 0.66, 1.00 and 3.33 :g/plate using *Salmonella typhimurium* strains TA 1535, 1537, 1538 and TA98 without S9 mix; at 0, 0.10, 1.00, 3.33, 6.66, 1.00 and 33.33 :g/plate using *S. typhimurium* strain TA100 without S9 mix; and at 1.00, 10.00, 33.33, 66.66, 100.00 and 333.33 :g/plate using all five *S. typhimurium* strains with Aroclor 1254 induced rat liver S9 mix. Exposure time of test article to bacterial strains was 72 hours. There were triplicate plates per concentration. **Possible adverse effect: The number of revertants increased in strain TA100 without activation**. UNACCEPTABLE. Upgradeable (no individual plate counts.) (Kishiyama and Gee, 8/21/02).

CHROMOSOME EFFECTS

**** 50283 - 015 114107** "Mutagenicity Test on GIV 2-0820 in an *In Vitro* Cytogenetic Assay Measuring Chromosomal Aberration Frequencies in Chinese Hamster Ovary (CHO) Cells." (J. L. Ivett, Hazleton Laboratories America, Inc., HLA study No.: 9725-0-437, 2/27/87). Giv 2-0820, purity 99.1%, was tested at concentrations of 1.0, 1.5, 2.25, or 3.0 :g/ml without metabolic activation and at 0.997, 2.49, 4.99, 7.48, 9.97 :g/ml with metabolic activation (rat liver S9 mix from Sprague Dawley rats treated with Aroclor 1254) for Trial I. Trial II (without metabolic activation) included concentrations ranging from 750 ng/ml to 30 :g/ml. There were duplicate cultures per concentration with100 metaphases scored per culture. Incubation without activation was 7.5 hours plus 2.5 hours post-exposure. With activation, incubation was for 2 hours followed by 17.8 hours before harvest of metaphase cells. Positive controls were functional. **Possible Adverse effect**: **Giv 2-0820 under the trial conditions (with and without metabolic activation) induced chromosomal aberrations with Chinese hamster ovary cells.** ACCEPTABLE STUDY. (Kishiyama and Gee, 8/21/02)

DNA DAMAGE

50283 - 015 114106 "Mutagenicity Test on GIV 2-0820 in the Rat Primary Hepatocyte Unscheduled DNA Synthesis Assay." (M. A. Cifone, Hazleton Laboratories America Inc., HLA Study No.: 9725-0-447, 8/6/87). Giv 2-0820, purity 99.1%, was assayed at concentrations of 0 (DMSO), 0.25, 0.50, 1.0, 2.5, 5.0, 10.0, 15.0, 20.0 or 25.0 :g/ml for the induction of UDS using primary hepatocytes from an adult male Fischer 344 rat. Exposure time was 18-19 hours to Giv 2-0820 concentrations. Giv 2-0820 concentrations of 15 :g/ml and higher were excessively toxic. There were five cultures per concentration, two for cytotoxicity and three for UDS. Three trials were conducted but only the third was reported as the other two were inadequate in terms of performance. Fifty cells from each of three coverslips were scored for net nuclear grains. The positive control was functional. Concentrations from 0.25 to 10 :g/ml gave no indication of inducing UDS. UNACCEPTABLE, Upgradeable (only net nuclear grain counts were reported but more detailed data are needed for evaluation such as nuclear grain counts and cytoplasmic counts for each of the three cultures scored, at minimum). (Kishiyama and Gee, 8/21/02).

NEUROTOXICITY

Not required at this time

MISCELLANEOUS

** 50283 - 017 114109 "A 21-Day Dermal Toxicity Study in Rabbits with Giv 2-0820." (C. S. Auletta, Bio/dynamics, Inc., Project No.: 4541-87, 7/28/88). Giv 2-0820, purity 99.1%, was administered dermally at doses of 0 (dimethyl phthalate), 10, 50 and 100 mg/kg/day to 5 New Zealand White rabbits/sex/group for 21 applications, 6 hours/day under occlusive dressing. Body weight was slightly lower for high dose males. Two high dose females were killed in moribund condition. Systemic NOEL = 50 mg/kg/day). The K^+ level increased for the high dose group, but the toxicological significance of this increase was unclear. Dermal irritation: the incidences of erythema, desquamation and atonia were increased for all dose groups and edema for the mid and high dose groups. The severity of dermal irritation tended to show a dose relationship. Dermal NOEL = <10 mg/kg/day. Acceptable. (Kishiyama and Gee, 8/23/02).